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European Quality Schemes, Between Identity-Shaping Values and the Market

Analysis of 176 production specifications for processed pork products

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Introduction

The EU regulation that established the geographical indications (GI) was approved in 1992 with the objective of recording and protecting the most significant and identity-defining food products made in European countries. These recognitions could also be extended to products from other countries.
In 2012 the relevant legislation was restructured, based on the fundamental themes of the 1992 regulation.

The regulation's introductory text reads: *"The **quality and diversity** of the Union's agricultural, fisheries and aquaculture production is one of its important strengths, giving a competitive advantage to the Union's producers and making a **major contribution to its living cultural and gastronomic heritage**. This is due to the skills and determination of Union farmers and producers who have kept **traditions alive** while taking into account the developments of new production methods and material."*

The text continues, echoing European citizens who *"increasingly demand quality as well as traditional products. They are also concerned to maintain the diversity of the agricultural production in the Union. This generates a demand for agricultural products or foodstuffs with identifiable specific characteristics, in particular those linked to their **geographical origin**."*

*"Operating quality schemes for producers which reward them for their efforts to produce a diverse range of quality products can benefit the rural economy," it goes on. "This is particularly the case in **less favoured areas, in mountain areas and in the most remote regions**, where the farming sector accounts for a significant part of the economy and production costs are high."*

Later, the regulation states: *"The scope for designations of origin and geographical indications should be limited to products for which an **intrinsic link exists between product or foodstuff characteristics and geographical origin**." Among the objectives of the scheme is "providing **clear information on products with specific characteristics linked to geographical origin, thereby enabling consumers to make more informed purchasing choices**."*[1]

Reporting on the results of a study on the economic value of European geographical indications, the European Union website details their benefits[2]:

Consumer benefits

- Quality assurance: the consumer is assured he is buying a genuine product with specific qualities

Producer benefits

- Open system: the use of the GI name is open to all producers complying with the product specification (contrary to the trade mark system limiting the use of a trade mark name to the owner of the trade mark)
- Fair competition: only producers complying with the specification may use the name
- Protection: the use of the name on the market place is controlled by the Member States control authorities
- Price premium: the study showed that GI products are sold (in average) 2.23 times as high as a comparable non-GI products[3]. In this way, belonging to the GI system is interesting for producers also from an economic point of view.
- Promotion: GI producers may benefit from EU promotion funds for quality products

1 Regulation EU 1151/2012 ("quality package"), which replaced Regulation EU 2081/1992, revoking previous regulations and uniting together all the relevant legislation.

2 https://europa.eu/rapid/press-release_MEMO-13-163_en.htm?locale=en

3 The total value of their GI production has been estimated at around 47.7 billion euros, realized in particular on the French market (32%) while over 20% is exported outside the Union. France is the largest producer of GIs, followed by Italy and Germany (see https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/Geographical_indications_report/geographical_indications_report_en.pdf)

Societal benefits

- Link valuable products to rural areas: production cannot be delocalised to another area
- Reconnect consumers and producers
- Protect traditions
- Environmental benefits: Linking traditional products with landscapes and farming systems

But is this really the case?

The political decision to protect and defend the best food products, establishing binding rules for their production and safeguarding that special mix of culture and geographic, soil and climate conditions that has made so many European foods famous, should be a model for all the world's countries. This certification system has made it possible to assign the PDO/PGI brand to 3,790 European agrifood products and 182 from outside of Europe[4].

Despite this, however, a careful reading of the production specifications for PDO and PGI products, first for cheeses (research carried out by Slow Food in 2019[5]) and then for cured pork products, has revealed a number of aspects that are not coherent with the framework described above and the objectives set by European legislators.

Our research set out to investigate, through a careful reading of the specifications, what exactly is guaranteed by the GIs for pork products. This was done in light of a belief that we believe is fundamental: that what gives a cured meat identity-shaping value and uniqueness is the link with local culture, with a local area and sensory properties that are recognized by the inhabitants of the community that has preserved the product.

The **link with the local culture** comes from specific production techniques adopted by a community, the result of local know-how (manual skills, traditional tools, knowledge passed down through generations), demonstrated by written or oral evidence that shows the transmission of the necessary artisanal knowledge through the generations (at least two, in order to be able to talk about transgenerational transfer and the establishment of a production tradition in a community over time).

Sensory characteristics are linked to ingredients, which in the specific context of this research means pork and seasonings, and to how they are processed and how the product is aged.
The specific nature and quality of the meat comes from the breed being farmed (native breeds, having adapted to a specific environment, have unique characteristics). But meat quality is also greatly affected by farming type, animal welfare and diet. The other ingredients used in the product are also important. Their quality is linked to their local origins, the plant variety and the type of cultivation and how they are processed.
How the meat is processed is the result of a set of skills, which must be passed on from one generation to the next. Ageing is influenced by the environmental characteristics of the local area (humidity, seasonal temperatures and natural ageing spaces are all aspects that give the finished products unique sensory properties) but also the skills and knowledge of the producers.

The objective of this research is to encourage reflection among producers, European authorities (as well as national and regional authorities), distributors and of course consumers around the meaning and role that geographic indications have today and should have in the future.

4 https://ec.europa.eu/info/food-farming-fisheries/food-safety-and-quality/certification/quality-labels/geographical-indications-register/
5 https://www.slowfood.com/wp-content/uploads/2019/09/European-designations-between-identity-values-and-market_ENG.pdf

GIs (geographical indications) are subdivided as follows:

PDO (Protected Designation of Origin)

When all the production phases take place in a defined geographical area and follow a recognized technique indicated in the specifications. Products owe their characteristics exclusively or essentially to their place of origin and the know-how of local producers. Examples: Prosciutto di Parma, Jambon du Kintoa.

PGI (Protected Geographical Indication)

When the fame or specific characteristics of a product are closely linked to a geographical area. At least one of the production, processing or preparation steps must take place in the specified area. Examples: Bresaola della Valtellina, Jamón de Trevélez.

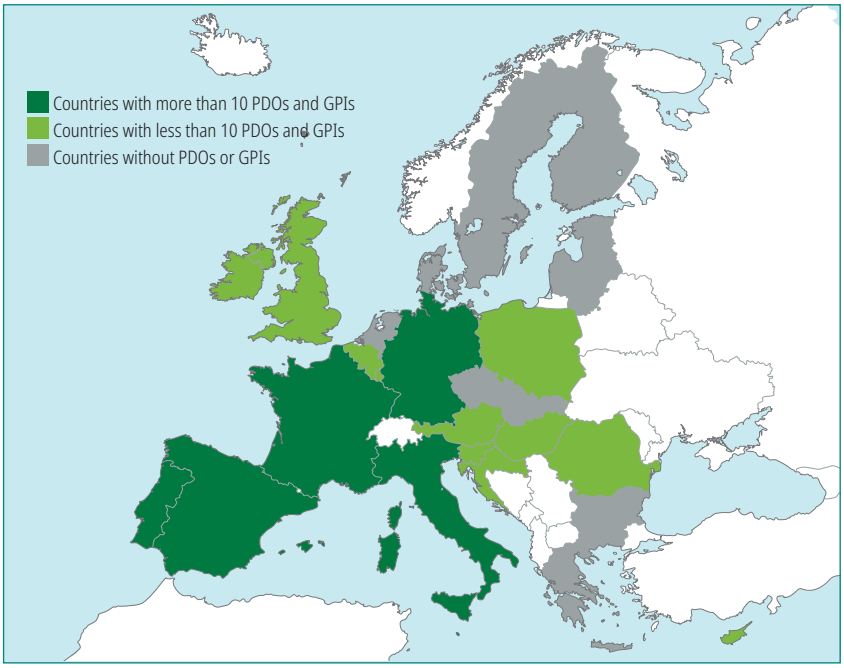
TSG (Traditional Speciality Guaranteed)

When the distinctive characteristics of a product come from the use of certain ingredients or from respect for a traditional production method. This designation is not linked to a specific area. Example: Mozzarella.
We did not take TSGs into consideration in our analysis because we do not believe these designations have a significant value. Protecting only the traditional recipe, with no anchoring to the local area or specific ingredients, means that they could be produced anywhere in the world, taking value and meaning away from the products.

Analysis of the production specifications of 176 cured pork PDOs and PGIs

The data that follow are the result of the analysis of **176[6] specifications** for PDOs and PGIs included in the category "Meat products (cooked, salted, smoked, etc.)". Only the denominations relating to **processed products obtained entirely or partially from pork** were studied.[7]
The texts[8] of the specifications were analysed and classified with specific reference to the following aspects: animal breed, origin of the raw materials (in this case the meat), farming techniques, animal welfare, diet, treatments given to the animals, processing and any additional ingredients.

Distribution in different countries and GI types



Countries	No.	PDO	GPI
Italy	42	21	21
Portugal	41	2	39
France	19	5	14
Germany	18		18
Spain	16	5	11
Croatia	8		8
Slovenia	8		8
United Kingdom	4		4
Cyprus	4		4
Hungary	4	1	3
Poland	4		4
Austria	2		2
Belgium	2		2
Ireland	1		1
Luxembourg	1		1
Romania	1		1
cross-border Croazia/Slovenia	1	1	
TOT	**176**	**35**	**141**

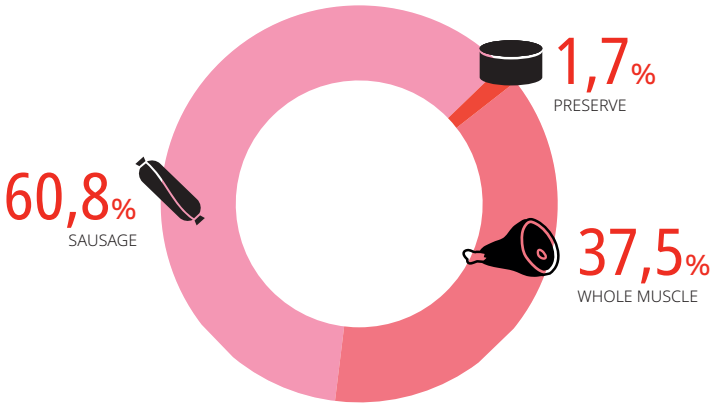
The map makes immediately clear the difference between the number of cured meats protected by geographical indications in southern European countries (firstly Italy, followed by Portugal, France and Spain, with Germany as an exception), decidedly higher than in other European countries (responsible for 118 out of 176). Almost all the PDOs are concentrated in this area (33 out of 35). Various reasons lie behind this disparity. The south of Europe is undoubtedly home to a rich gastronomic history and culture and an immense culinary biodiversity, and this, along with gastronomic pride and the willingness of governments to invest in this sector and systematize it, is one of the main reasons for the high number of GIs. The limited number of Eastern European countries is perhaps at least partly due to the decades of collectivism, which has wiped out many traditional craft productions, and the technical difficulties in applying the legislation at this time.

6 Of the 176 specifications studied, 172 were for products from the European Union and four were for products from the United Kingdom.

7 The total number of geographical indications registered within the EU under the category "Meat products (cooked, salted, smoked, etc.)" is 179. Given the focus on pork-based products, the following were excluded: Bresaola della Valtellina PGI (Italy), Sneem Black Pudding PGI (Ireland), Potjesvlees uit de Westhoek PGI (Belgium), Cârnaţi de Pleşcoi PGI (Romania), Lapin Poron Kylmäsavuliha PDO (Finland), Lapin Poron kuivaliha PDO (Finland), Gornooryahovski sudzhuk PGI (Bulgaria).

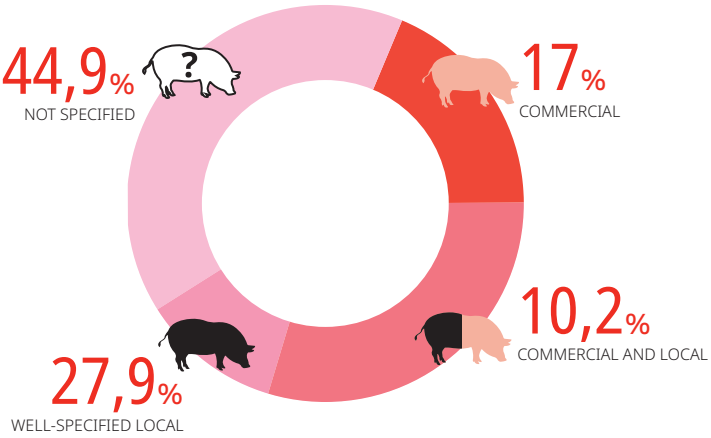
8 https://ec.europa.eu/info/food-farming-fisheries/food-safety-and-quality/certification/quality-labels/geographical-indications-register/

▸ The products



Worth noting is the distinct **majority of sausage-type products, those made with meat packed in a casing (107 out of 176).** This is followed by whole-muscle cured meats (66) and preserves (3).[9]

▸ Pig breeds

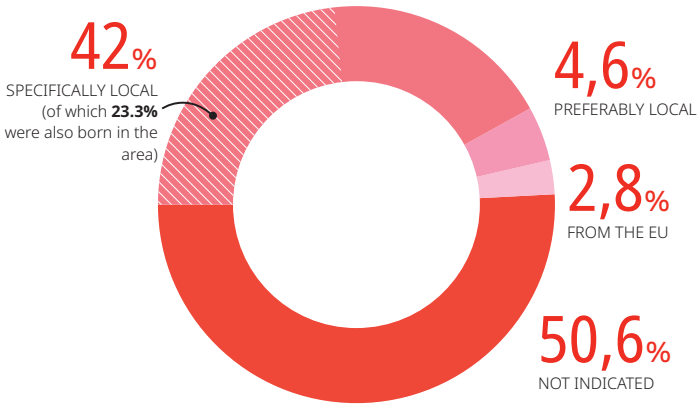


Out of the 176 specifications, 79 (44.9%) make no reference to any specific breed and 30 (17%) specify the use of commercial breeds (Large White, Landrace, Duroc).
The most virtuous geographical indications – the 49 specifications (27.9%) that call for the use of native breeds – are concentrated in Portugal, Spain and France.
There are 650 registered pig breeds globally, of which 150 are extinct. Another 164 are at risk of loss, while over 95% of European pork production revolves around a few breeds, genetically selected for their performance to increase farm profitability.[10]

9 Some specifications allow the possibility of making both sausage-type cured meats and preserves under the same indication. Only those that are exclusively for a preserve are included in the preserve section of the chart.

10 https://www.oecd.org/greengrowth/sustainable-agriculture/19430433.pdf

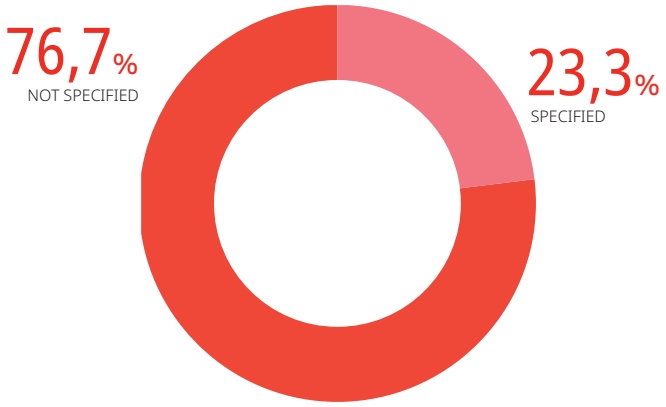
▸ Origin of meats



A total of 89 specifications (50.6%) contain no mention of the origin of the meat. These are all PGIs; as authorized by Article 5.2 of Regulation 1151/2012,[11] they can almost entirely disregard the geographical context, to the point that some specifications expressly state that there are no geographical limitations on the origin of the pigs,[12] while others, in the section of the specifications entitled "Origin of raw materials", dismiss the matter as not relevant (Jamón de Trevélez IGP, Spain).

74 specifications (42%) demand that the pigs used for the production of the cured meat must at least be raised within a production area whose borders are specifically defined. Of these, 41 (23.3%) specify that the pigs must be not only reared but also born within that same area. Eight specifications (4.6%) say that the meat must preferably, though not necessarily, come from within the defined geographical area. This is the case also for those indications that do not have particular requirements in regards to the origin of raw materials for the basic product, but which include a further sub-denomination for when the pigs are of local provenance[13].

▸ Place of birth of piglets



A total of 135 specifications do not contain any limitation nor indication regarding the place of birth of the pigs.

11 Regulation (EU) 1151/2012, Article 5.2: "For the purpose of this Regulation, 'geographical indication' is a name which identifies a product: (a) originating in a specific place, region or country; (b) whose given quality, reputation or other characteristic is essentially attributable to its geographical origin; and (c) at least one of the production steps of which take place in the defined geographical area."

12 Salame Piemonte PGI (Italy), Prosciutto di Norcia PGI (Italy), Holsteiner Katenschinken PGI (Germany).

13 For example, within the Sobrasada de Mallorca PGI (Spain), Sobrasada de Mallorca "de cerdo negro" must be produced with meat from native Mallorcan pigs, reared according to traditional methods, in extensive or semi-extensive farming systems. Likewise, the accessory term "Bauernspeck" within the Speck Alto Adige PGI (Italy) can be used for products made with the legs of pigs raised and slaughtered in Alto Adige.

Pig farming in the European Union

150 million pigs are raised in Europe, with Spain in particular (31 million pigs), followed by Germany and France. About half of the meat produced on the continent is pork. The EU is currently the world's leading exporter of pork products. Its exports have been stimulated by declining production in Asia, where African swine fever is decimating millions of animals, looming as a threat to the future of European livestock farming as well.

In 2015, there were 2.2 million pig farms in the EU, more than half of them in Romania.

More than 75% of the EU's pigs are raised on very large farms. Among the top nine producing countries, Denmark has the largest commercial farms with an average of 4,700 head and Germany the smallest, with an average of 1,900 head per farm. Only 1% belongs to organic farms, however mostly of important dimensions. Only 3% of European pigs are raised on farms with a few dozen heads.[14]

Italy raises about 10 million pigs, 70% of which are destined for PDO production, mainly driven by hams.[15]

▸ Farming practices

72,2% NOT INDICATED

22,7% SEMI-EXTENSIVE

4,5% EXTENSIVE

0,6% INDOORS

The trend of not regulating relevant aspects (like the breed and the origin of the raw materials) continues in the farming techniques: **127 specifications (72.2%) take no position on the subject**, callowing any practice that is not banned by national or European law. In the vast majority of cases, the meat used for the products is supplied

14 https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/652044/EPRS_BRI(2020)652044_EN.pdf

15 https://www.senato.it/application/xmanager/projects/leg17/attachments/documento_evento_procedura_commissione/files/000/005/507/ANAS_prot._2359_del_25_settembre_2017.pdf

by large intensive farms that rear commercial breeds of pig, whose quality would be the same irrespective of what country they come from.

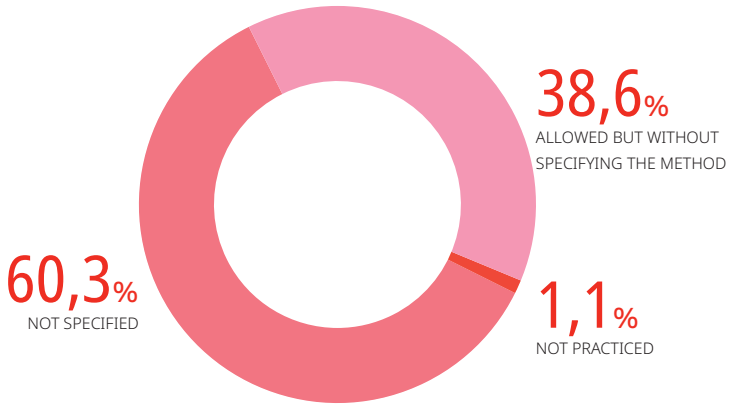
In the specific case of Italian GI (42), not one contains sufficient specific information about this aspect.
11 of these[16] limit themselves to referencing the Prosciutto di Parma PDO and Prosciutto San Daniele PDO "in regards to the breeds, diet and farming method". But these two PDOs are in fact not sufficiently precise on farming methods.

Both refer to the so-called "Italian heavy pig". In fact, this term defines the category of pig considered ideal for the production of hams (animals with precise genetics based on crosses between duroc males and large white x landrace females, which guarantee an optimal balance between fat and lean parts, a good yield during aging, fertility, to be slaughtered no earlier than 9 months of age and weighing no less than 160 kg). This type of animal guarantees quality performance in the processing phase but certainly does not set adequate parameters to guarantee animal welfare.[17]

A specification, even if not in very clear terms, provides for stabled farming: it is Szegedi szalámi DOP (Hungary).

The use of virtuous farming techniques, whether extensive or semi-extensive, is once again concentrated in precise geographical areas: the 147 specifications that do call for them are for Spanish, French and Portuguese cured meats.

▸ Castration

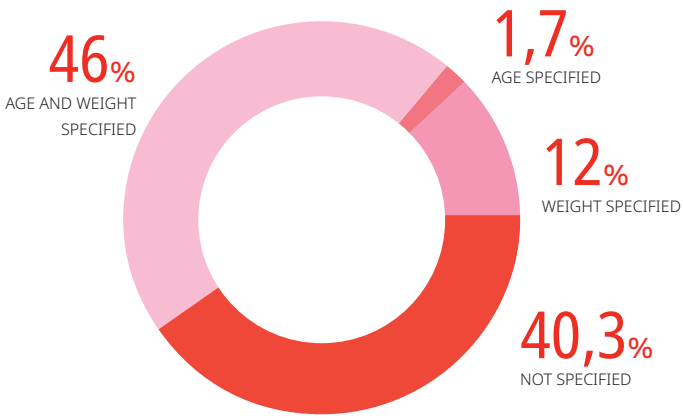


Still looking at farming practices, 68 specifications (38.6%) provide for castration, but **not one indicates the method** that should be used. This practice can be incredibly painful for the animal and a source of great stress if not carried out by expert personnel using anaesthesia and painkillers.

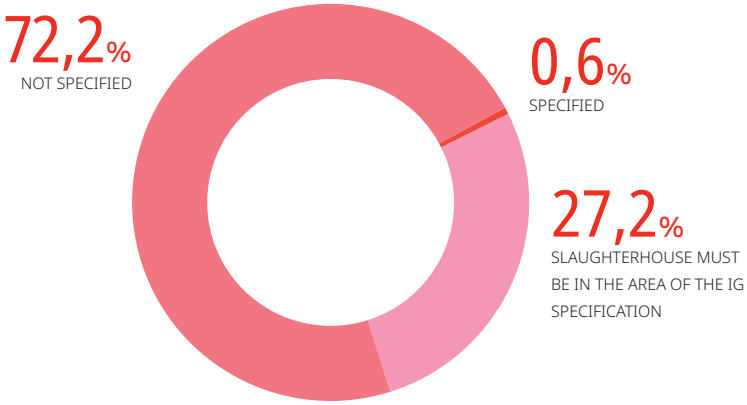
16 Culatello di Zibello PDO, Pancetta Piacentina PDO, Prosciutto di Carpegna PDO, Prosciutto Toscano PDO, Salame Brianza PDO, Salame d'oca di Mortara PGI, Salame Piacentino PDO, Coppa piacentina PDO, Salamini italiani alla cacciatora PDO, Valle d'Aosta Jambon de Bosses PDO, Valle d'Aosta Lard d'Arnad PDO.

17 https://suinicoltura.edagricole.it/suini/suino-pesante-con-anas-razze-italiane-migliorate/

▸ Slaughtering



▸ Distance between slaughterhouse and farm



While 81 out of 176 specifications (46%) detail the weight and age at slaughtering, an equally significant 40.3% (71 specifications) do not give any minimum for these aspects. Another 21 specifications give the weight, and three only the age. Additionally, only 48 specifications state that slaughtering must take place within the defined production area, limiting the transport of the pigs and their resulting stress. As many as **72,2% (127 specifications) do not set any limits on the distance between the slaughterhouse and the farm**.

Slaughtering almost always takes place far from the place where the pigs were reared, after they have travelled distances that have doubled over the last 30 years.
1.037 billion livestock animals are transported within EU countries every year, of which 1 billion are chickens and other poultry species and 37 million are cattle, pigs, sheep, goats and horses. Of these, 8 million travel for over 8 hours, and the journey can easily last 30 hours or more – in some cases over 96 hours.
The current regulations on the protection of animals during transport[18] do not set any maximum limit on the journey time. Only two Portuguese specifications (for Farinheira de Estremoz e Borba PGI and Paia de Toucinho de Estremoz e Borba PGI) state that the animals' journey to the slaughterhouse cannot last more than 8 consecutive hours, in conformity with the European guidelines on pig transport[19].

18 https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32005R0001
19 http://animaltransportguides.eu/wp-content/uploads/2016/05/Guides-Pig-EC-Templ.pdf

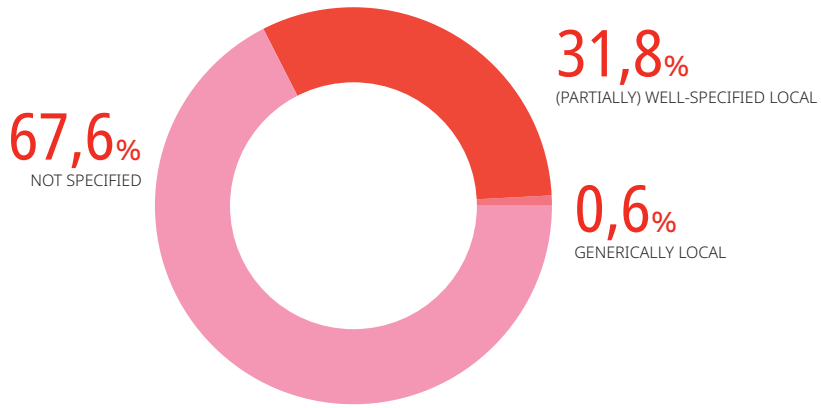
During travel, the health of the animals is often seriously threatened. Loading and unloading the animals, long-distance travel, overcrowding, lack of rest, hunger and thirst are all sources of stress and suffering. There is also a high probability of falls, injuries and disease, which can be fatal[20].

None of the specifications contains particular animal welfare measures, or measures different from or more restrictive than those set by law.

There are no restrictions on mutilations, even though pig farming often involves teeth clipping, tail docking and nose rings to avoid damage to the ground in the case of free-range farms. Evidently, national and EU animal welfare legislation is held to be sufficient[21].

In regards to this, the Italian specifications based on those for Prosciutto di Parma PDO and Prosciutto di San Daniele PDO limit themselves to stating that: "Breeding facilities and equipment shall ensure animal welfare. Shelters shall be fitted out with proper insulation and ventilation systems to guarantee optimum temperatures, effective air circulation and removal of noxious gases. Floors shall be characterised by the lowest possible percentage of cracks and shall be constructed with water-resistant, thermal, and antiskid materials. Depending on the type of diet, all facilities and equipment shall be properly resistant to corrosion." This is in line with Italian Legislative Decree of 7 July 2011, no. 122 implementing Directive 2008/120/CE, which establishes the minimum requirements for the protection of pigs. These indications are, frankly, insufficient.

▸ Feed origin

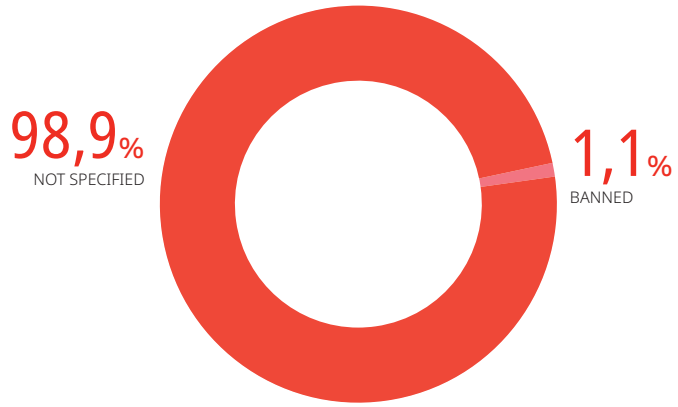


Out of the 176 specifications, 119 (67.6%) contain no indications about the origin of the feed for the pigs. These include PDO products, and the lack of specific provisions about feed contrasts – or at least does not ensure conformity – with Commission Delegated Regulation (EU) No. 664/2014, which states that for PDOs, "Feed sourced from outside the defined geographical area shall in no case exceed 50% of dry matter on annual basis." [22]

Of the 56 specifications that demand that at least part of the feed comes from within the local area, some use phrases such as "in line with market availability" or "primarily".[23]
Other specifications do not even indicate the percentage ratio of ingredients in the ration.

20 http://www.lav.it/cpanelav/js/ckeditor/kcfinder/upload/files/files/SCHEDA%20-%20%23STOPTHETRUCKS.pdf
21 Italian Legislative Decree of 7 July 2011, no. 122 implementing Directive 2008/120/CE which establishes the minimum requirements for the protection of pigs.
22 https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32014R0664
23 E.g. Pancetta di Calabria PDO and Parmigiano Reggiano PDO.

▸ GMOs in feed



Almost all of the specifications (174) give no indications about the use of GMOs in animal feed, implicitly allowing the use of genetically modified soy and corn. After all, 74% of all the soy grown in the world is genetically modified[24].

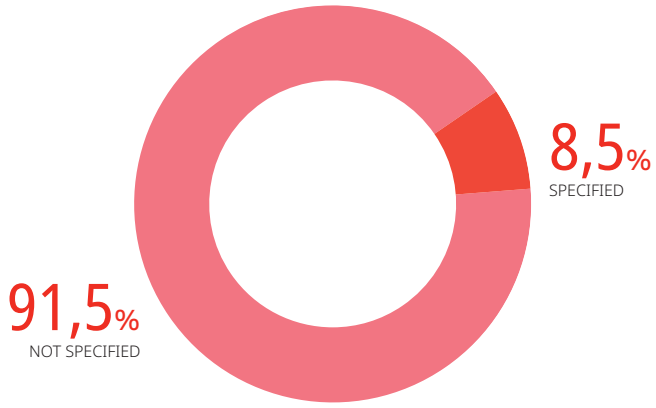
Only the specifications for Jambon du Kintoa PDO and Jambon de Bigorre PDO, both from France, expressly forbid the use of feed of transgenic origin throughout the entire life of the pigs

▸ Grazing

Just 46 specifications out of 176 (26.1%) state that the animals must be allowed to graze (once again, these are all for French, Portuguese and Spanish products).

24 https://www.isaaa.org/resources/publications/briefs/55/executivesummary/default.asp

▸ Ban on certain foods

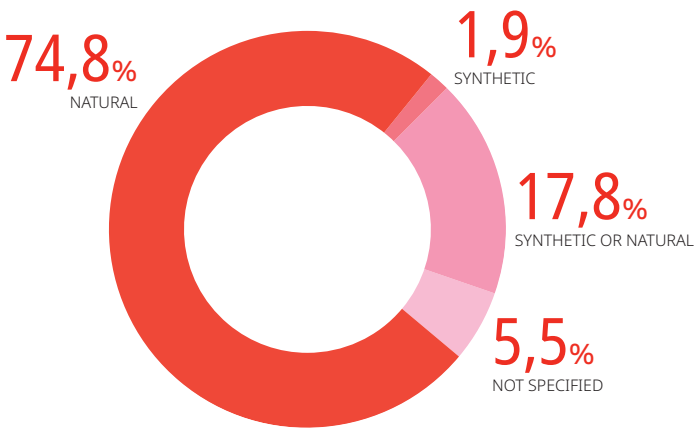


Only 15 specifications expressly ban the use of certain foods/substances. The ingredients most commonly forbidden are fish meal, growth promoters, zootechnical additives for growth, anabolic substances, manioc, potatoes, dairy by-products, table scraps, slaughter waste and animal meal.

▸ Treatments

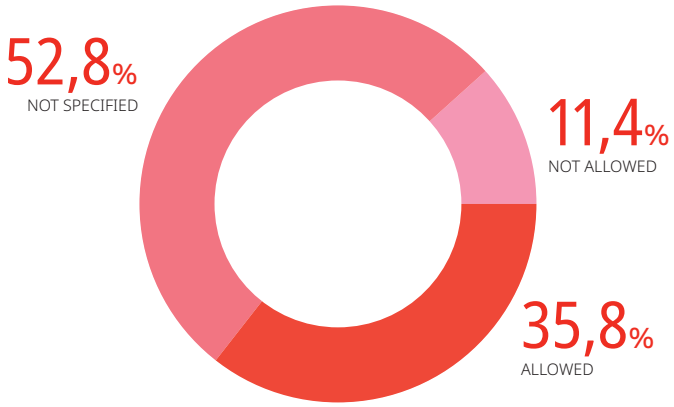
No specifications contain indications relating to vaccinations or the use of anti-parasite products. **Only two specifications ban the use of antibiotics**: Gailtaler Speck PGI (Austria) and Presunto de Barroso PGI (Portugal).

▸ Casing type



Of the 107 sausage-type products recorded in Europe as PDOs or PGIs, an encouraging 74.8% (80) expressly require the use of natural casings, while 19 offer the choice between natural or synthetic.

▸ Additives



The use of nitrites (E249-E250) and nitrates (E251-E25) within legal limits is specifically allowed in 63 specifications (the majority of the European protected products are sausage-type cured meats) while 93 (52.8%) contain no indications, and therefore implicitly allow these additives.
The remaining 11.4% (just 20 specifications, but only 5 of those are sausages or preserves) expressly ban the use of these additives during the production process.[25]

In 88.6% of the specifications of European cured meats protected by GIs, the presence of nitrites and nitrates is allowed, more or less explicitly.

25 Istarski pršut/Istrski pršut PDO (Croatia/Slovenia), Šebreljski želodec PGI (Slovenia), Jamón de Trevélez PGI (Spain), Presunto de Melgaço PGI (Portugal), Linguiça do Baixo Alentejo PGI (Portugal), Jambon d'Auvergne PGI (France), Rillettes de Tours PGI (France), Prosciutto di Parma PDO (Italy), Prosciutto di San Daniele PDO (Italy), Crudo di Cuneo PDO (Italy), Lardo di Colonnata PGI (Italy), Prosciutto di Carpegna PDO (Italy), Prosciutto di Sauris PGI (Italy), Prosciutto Toscano PDO (Italy), Prosciutto Veneto Berico-Euganeo PDO (Italy), Valle d'Aosta Jambon de Bosses PDO (Italy), Lountza Pitsilias PGI (Cyprus), Loukaniko Pitsilias PGI (Cyprus), Hiromeri Pitsilias PGI (Cyprus), Zgornjesavinjski' želodec PGI (Slovenia).

Nitrites and nitrates

Nitrites (E249 and E250) and nitrates (E251 and E252) are used in the production of cured meats because they control microbial growth, that is, they perform a preservative function, prevent the germination of Clostridium botulinum spores (botulism) and, in conjunction with antioxidants like ascorbic acid, maintain the colour of uncooked and cooked cured meats and give flavour.

These substances are considered dangerous and carcinogenic if consumed in excessive quantities. In an acidic environment, like the stomach, nitrites turn into nitrous acid. This compound, particularly when present in large amounts, bonds with amines and produces nitrosamines, a group of compounds classified as probably carcinogenic (class 2A) by IARC, the WHO's International Agency for Research on Cancer.[26]

Nitrates and nitrites in high doses can cause hemoglobin to be oxidized and transformed into methemoglobin, the excess of which reduces the ability of red blood cells to bind and transport oxygen in the body, causing, in severe forms, methemoglobinemia.

Under specific conditions, such as long storage, warm temperatures and an acidic pH, nitrates can be converted into nitrites. For example, thanks to the bacterial flora in saliva, this is how they reach the stomach and the rest of the gastrointestinal system.

In 2017, EFSA (European Food Safety Authority) published two scientific opinions[27] on these substances where they clarified that the acceptable daily intakes (ADIs) are 0.07 and 3.7 milligrams per kilogram of body weight per day (mg/kg bw/day) for nitrites and nitrates, respectively.

▸ Allowable daily dose

	NITRITE (E249-E250)	NITRATE (E251-E252)
Adult (70 kg)	4,9 mg	259 mg
Child (20 kg)	1,4 mg	74 mg

The regulations[28] that govern the use of these substances state that the quantity of nitrites (E249-E250) added to cured meats during processing must not exceed 150 mg (0.15 g) per kilo of product. In the case of sterilized meat products, the maximum quantity is 100 mg/kg.

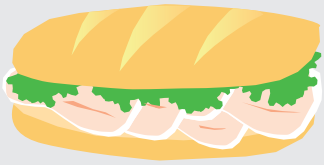
For nitrates (E251-252), the amount is 150 mg/kg (not allowed in heat-treated meat products). The production of nitrosamines in the presence of nitrites and nitrates is hindered by the presence of ascorbic acid.

26 https://www.airc.it/cancro/informazioni-tumori/corretta-informazione/additivi-conservanti-alimentari
27 https://www.efsa.europa.eu/sites/default/files/corporate_publications/files/nitrates-nitrites-170614.pdf
28 https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:02008R1333-20161027&from=SV

But how much nitrites and nitrates do cured meats contain?[29]

Ham sandwich

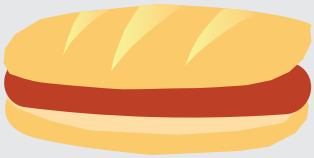
(with 50 g of sliced ham)



0,47 mg
NITRITE

Hot dog

(around 80 g per hot dog)



0,79 mg
NITRITE

None of these doses exceeds the maximum threshold calculated based on the allowable daily dose, but nitrites and nitrates are also consumed every day through other sources that are hard to control. Nitrates are found in some vegetables and leafy greens (rocket, spinach, lettuce, turnips, chard and celery, for example). They range from a minimum of 1 mg/kg (peas and Brussels sprouts) to a maximum of 4800 mg/kg (spinach, lettuce and sometimes rocket).
They are among the contaminants found in drinking water, thanks to discharge from factory farms and wastewater. This makes it impossible to predict their cumulative effect in the body, given that much of their consumption happens unawares. Denmark has lowered the allowable level of nitrite to 60 mg/kg, with some exceptions, during processing, precisely because of the health risks, risks that are greatest for children.
As reported in the Commission document that evaluated Denmark's choice, *"If all sources of dietary nitrite exposure were considered together (food additives, natural presence and contamination), the ADI would be exceeded in infants, toddlers and children at the mean and for all age groups at highest exposure. The contribution of nitrites used as food additives represented approximately 17% (range 1,5-36,0%) of the overall exposure"*[30].
Finally, in the same document it is reported that *"EFSA confirmed evidence to link preformed N-nitrosodimethylamine and colorectal cancers and some evidence to link (i) dietary nitrite and gastric cancers and (ii) the combination of nitrite plus nitrate from processed meat and colorectal cancers".*
In Denmark, again according to the above paper, there are fewer cases of botulism than in other EU member states; no cases have been detected since 1980 due to consumption of meat products and no cases of botulism have been recorded since 2006. In France a legislative proposal was recently presented that would gradually phase out the use of nitrites and nitrates in cured meats. This has been in part thanks to the hundreds of thousands of signatures collected on a petition launched on 20 November 2019 by the *Ligue contre le cancer*, the French consumer association Foodwatch France and the food evaluation app Yuka.[31] This petition was recently blocked due to pressure from manufacturers' associations. In January 2021, Stella Kyriakides, the European Commissioner for Health and Food Safety, responded to the query presented by an MEP, who asked the Commission to ban the use of sodium nitrite in cured meats. Kyriakides responded that the Commission had launched a discussion with member states to review the maximum allowed levels of nitrites in accordance with Regulation (EC) No 1333/2008 in order to reduce as much as possible the exposure to nitrites when used as food additives, while still maintaining their use as preservatives.[32]

Producing cured meats without nitrites and nitrates is possible, acting in particular on the processing temperatures of meat, using maximum hygiene during processing, selecting high quality meat and evaluating case by case the characteristics of the products and the relative production technologies[33].
Slow Food promotes the production of natural cured meats as part of its Slow Meat campaign and within its Slow Food Presidia.

29 https://www.researchgate.net/publication/281604285_Residual_nitrite_and_nitrate_in_meat_preserved_products

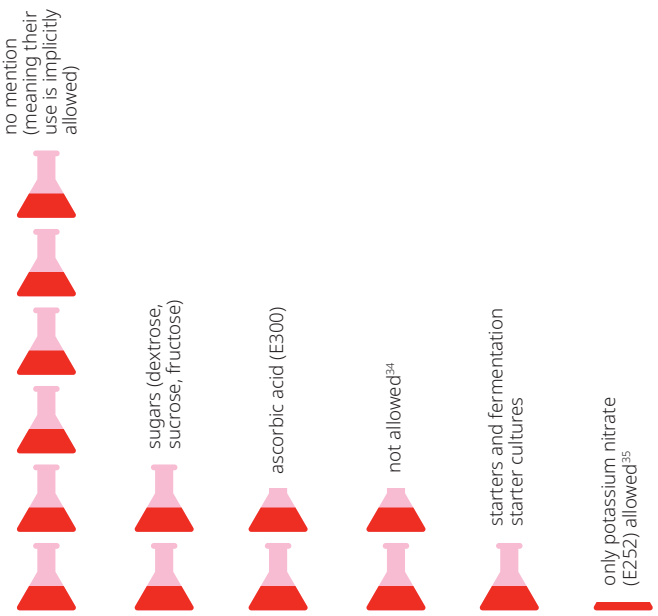
30 https://www.legislation.gov.uk/eudn/2018/702

31 https://www.foodwatch.org/fr/sinformer/nos-campagnes/alimentation-et-sante/additifs/petition-stop-aux-nitrites-ajoutes-dans-notre-alimentation/?cookieLevel=not-set

32 https://www.ruminantia.it/interrogazione-parlamentare-sullimpiego-dei-nitriti-negli-alimenti/

33 https://pubmed.ncbi.nlm.nih.gov/26619314/

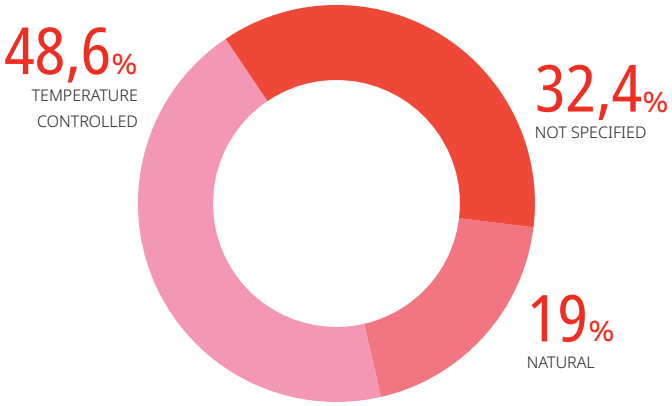
Regarding other additives, sugars, starters, the specifications state:



Even the specifications that are the most virtuous when it comes to animal farming pay little attention to the use of additives during processing.

▸ Ageing rooms

148 answers



In 48.6% of the specifications (72), ageing takes place in temperature-controlled facilities, 19% (28) require natural ageing rooms, while 48 contain no specific indications.
Few cured meats today are still cured in natural cellars, caves, which in the past preserved on their walls unique mi-

34 Dalmatinski pršut PGI (Croatia), Drniški pršut PGI (Croazia), Istarski pršut/Istrski pršut PDO (Croatia/Slovenia), Šebreljski želodec PGI (Slovenia), Chorizo Riojano PGI (Spain), Jamón de Trevélez PGI (Spain), Eichsfelder Feldgieker/Eichsfelder Feldkieker PGI (Germany), Presunto de Melgaço PGI (Portugal), Linguiça do Baixo Alentejo PGI (Portugal), Presunto de Barroso PGI (Portugal), Coppa de Corse PDO (France), Jambon Sec de Corse PDO (France), Lonzo de Corse PDO (France), Saucisson de l'Ardèche PGI (France), Jambon de l'Ardèche PGI (France), Prosciutto di Parma PDO (Italy), Prosciutto di San Daniele PDO (Italy), Lardo di Colonnata PGI (Italy), Prosciutto di Carpegna PDO (Italy) , Prosciutto di Sauris PGI (Italy), Prosciutto Toscano PDO (Italy),Prosciutto Veneto Berico-Euganeo PDO (Italy), Valle d'Aosta Jambon de Bossess PDO (Italy), Crudo di Cuneo PDO (Italy), Zgornjesavinjski' želodec PGI (Slovenia), Lountza Pitsilias PGI (Cyprus), Loukaniko Pitsilias PGI (Cyprus), Hiromeri Pitsilias PGI (Cyprus).

35 Saucisson de l'Ardèche PGI (France), Jambon de l'Ardèche PGI (France).

croflora, stratified over generations. The temperatures, a certain humidity, the winds that filtered through windows to be opened when necessary: all this is at the base of the development of norcine traditions in precise areas, such as the Po Valley.
Today, if you will, this is the great loss. Natural places are only seen more in commercials and for the development of mold we rely on industry. Both at the beginning (the meat) and at the end of the chain (the seasoning), the differences with tradition are strong and today the homologation of cured meats reigns supreme.

▸ Smoking

76 answers

Among the 76 products that are smoked, 67 of the specifications require natural smoking while the rest do not specify, leaving the door open to the possibility of using chemical or liquid smoke.

Liquid smoke is a product developed a few decades ago in the United States to flavour cured meats, cheeses and other foods that had been traditionally smoked over fires of woods such as oak, chestnut, beech and acacia, and sometimes herbs like thyme or bay. Liquid smoke is a liquid extract of the aromatic compounds of natural smoke which can be atomized or injected or in which the cured meat can be bathed or soaked. The traditional practice, on the other hand, involves exposing the charcuterie to the smoke of burning firewood or wood shavings.

If the label states “smoke flavouring” this means that liquid smoke has been used. Otherwise the label will say that the product has been “smoked”. Some components of the smoke (PAH or polycyclic aromatic hydrocarbons) can be carcinogenic if found in foods over certain limits.

CONCLUSIONS

This analysis of the cured pork products covered by EU quality schemes paints a discomfiting picture. What emerges is a serious underestimation of the production steps prior to the meat being processed (choice of animal breed, farming methods and animal feed but also the quality of the other ingredients used in processing, not to mention additives and other synthetic products). European cured pork production should represent the pinnacle of the sector, but it is clear that there is a grave lack of attention towards crucial aspects that can give quality to the final product. Production is obviously closely tied to the industrial model of animal farming, criticized for its environmental impact, the consequences for consumer health and the lack of respect for the animals being farmed.

Protecting a traditional product means guaranteeing the production conditions that have shaped its fame and identity. Among these, the raw materials should be an expression of the area where the product is made, and the animals and their diet are also crucial to giving identity and ensuring sensory quality to cured meats, as are the skills linked to their processing.

Despite this, the absence of more stringent indications and rules at a European level, alongside the leniency or indifference of member states, gives producers' consortia a wide margin of discretion both in drawing up production specifications and, when a specific aspect is not regulated, in their practical application. This gives ample scope to industrial producers who, due to their size, must apply a certain level of standardization, taking advantage of the additives available on the market in order to simplify and speed up processes, avoid or correct production defects and increase the shelf life of the product. All of this is not without consequences for the quality of the products and the standardization of flavours.

European regulations should include general guidelines for every product category, valid in every country, that set minimum requirements on these issues. These requirements can then guide the drawing up of product specifications and their uniform and coherent interpretation and application.

Instead, European rules allow for a significant weakening of the link with the place of origin. Not only is it sufficient for PGIs that only one of the production steps (for cured meats, usually the processing of the meat) takes place within the geographical area stated in the specifications (Reg. EU 1151/2012, Article 5.2), but even for PDOs an exemption authorizes the sourcing of raw materials from outside the defined area (Reg. EU 1151/2012, Article 5.3). This decision is only understandable from the perspective of encouraging the production of large quantities of products for the national and most importantly the international market.

The results that emerged also highlighted a major discrepancy in the level of depth of the specifications. While some are extremely well articulated and interested in focusing on many of the production steps, with high quality standards and very precise rules, others are fairly superficial, leaving space for the use of poor-quality raw materials and industrial processes.

For example, 45% of specifications do not mention the animal breed to be used and only 27.9% specify native breeds, while 67.6% make no mention of the origin of animals' feed (crucial to the quality of the meat). No one mentions sufficiently articulated conditions of animal welfare (thus relying only on compliance with the regulations, which are in fact lacking and little respected), only 4.5% provide extensive grazing and about 22.7% semi-extensive grazing (which in reality almost always provides only paddocks of insufficient size). The vast majority (88.6%) of product specifications give no indication regarding the use of additives, or expressly allow them.

A revision of the new European regulation is being studied, our hope is that the new indications of the legislators will be more rigorous on these aspects, if it want to focus on sustainability and quality for the GI system, and stand out on the global market.

For this reason, Slow Food suggests that the following measures be included in the revision of the rules for Geographical Indications, in order to improve and guarantee their sustainability, and protect the biodiversity at the base of a diverse, healthy and fair food system.

Slow Food proposes to take into account:

- explicitly introduce the method of farming the animals used to make the cured meats, demanding greater respect for animal welfare, a better and more local diet, slaughtering within the defined geographical area and also the trialling of slaughtering on the farm.
- the promotion of local breeds, extensive breeding with the revival where possible of historic genotypes.
- a ban on the use of nitrites, nitrates and other chemical additives, replacing them with technological processes that act on temperatures and possibly with natural substances of vegetable origin
- greater attention to the recovery of historical and traditional aspects of production practices for the PDOs, including the definition of historic production areas and natural ageing cellars
- prohibition of the transport of live animals over long distances. Transport over distances of less than 100 km should also be minimized, as it is a trauma for the animals and is detrimental to their welfare.
- that the GI system and the drafting of production protocols be systematized and standardized, with explicit indication of the parameters analyzed in this study: breed, origin of the meat, place of birth of the animal, farming practices, castration, slaughter, distance of the slaughterhouse from the place of rearing, indication of animal welfare measures beyond legislation, origin of feed and indication of GMO feed if used

Here follows a detailed table that identifies the main distinctive aspects underlying the specifications.

PRODUCT NAME	GI	Country	Product type	Breed	Origin of raw materials	Farming practices	Pigs born in production area	Castration	Feed origin	Banned foods	Grazing	Preven-tative antibiotics	Slaughtering	Nitrites and nitrates	Casing type	Additives	Smoking	Ageing rooms
Aachener Weihnachts-Leberwurst/Oecher Weihnachtsleberwurst	PGI	Germany	Sausage		Preferably (but not necessarily) local		No or not specified							Allowed	Natural			
Alheira de Barroso	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Alheira de Mirandela	PGI	Portugal	Sausage	Well-specified local			No or not specified								Natural		Natural	
Alheira de Vinhais	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	Yes		(Partially) well-specified local				Slaughterhouse must be within the area		Natural		Natural	
Ammerländer Dielenrauchschinken ; Ammerländer Katenschinke	PGI	Germany	Whole muscle	Commercial and local	Preferably (but not necessarily) local		No or not specified											
Ammerländer Schinken/ Ammerländer Knochenschinken	PGI	Germany	Whole muscle	Commercial and local	Preferably (but not necessarily) local		No or not specified											
Baranjski kulen	PGI	Croatia	Sausage		Preferably (but not necessarily) local		No or not specified								Natural			
Botillo del Bierzo	PGI	Spain	Sausage				No or not specified								Natural		Natural	
Boudin blanc de Rethel	PGI	France	Sausage				No or not specified								Natural	Colourings, antioxidant of natural origin, artificial flavours		
Budapesti téliszalámi	PGI	Hungary	Sausage	Commercial and local			No or not specified	Allowed but without specifying the method					Age and weight specified	Allowed	Synthetic or natural	Only restriction is that lactic acid bacteria cannot be used for the formation of mould	Natural	Temperature controlled
Butelo de Vinhais	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	Yes		(Partially) well-specified local		Specified		Slaughterhouse must be within the area		Natural		Natural	
Cacholeira Branca de Portalegre	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified		Natural			Temperature controlled
Capocollo di Calabria	PDO	Italy	Sausage	Commercial and local	Well-specified local		No or not specified	Allowed but without specifying the method	(Partially) well-specified local but in line with market availability	Manioc, potatoes, by-products from milk processing			Age and weight specified	Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), starters/fermentation starter cultures		Temperature controlled
Carmarthen Ham	PGI	United Kingdom	Whole muscle	Commercial and local			No or not specified							Allowed				Temperature controlled

PRODUCT NAME	GI	Country	Product type	Breed	Origin of raw materials	Farming practices	Pigs born in production area	Castration	Feed origin	Banned foods	Grazing	Preven-tative antibiotics	Slaughtering	Nitrites and nitrates	Casing type	Additives	Smoking	Ageing rooms
Chorizo de Cantimpalos	PGI	Spain	Sausage	Cosmopolite			No or not specified	Allowed but without specifying the method					Age and weight specified		Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), lactose		Temperature controlled
Chorizo Mouro de Portalegre	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Chorizo Riojano	PGI	Spain	Sausage				No or not specified	Allowed but without specifying the method						Allowed	Natural	Not allowed		Temperature controlled
Chosco de Tineo	PGI	Spain	Sausage				No or not specified								Natural		Natural	
Chouriça de carne de Barroso	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Chouriça de Carne de Vinhais	PGI	Portugal	Sausage	Well-specified local		Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Chouriça de Sangue de Melgaço	PGI	Portugal	Sausage	Well-specified local			No or not specified						Age and weight specified		Natural		Natural	
Chouriça Doce de Vinhais	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	Yes		Well-specified local		Specified		Slaughterhouse must be within the area		Natural		Natural	
Chouriço Azedo de Vinhais	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	Yes		(Partially) well-specified local		Specified		Slaughterhouse must be within the area		Natural		Natural	
Chouriço de Abóbora de Barroso	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Chouriço de Carne de Estremoz e Borba	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	Yes	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area		Natural		Natural	Temperature controlled
Chouriço de Portalegre	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Chouriço Grosso de Estremoz e Borba	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	Yes	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area		Natural		Natural	Temperature controlled
Ciauscolo	PGI	Italy	Sausage	Cosmopolite			No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified	Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), lactose		Temperature controlled

PRODUCT NAME	GI	Country	Product type	Breed	Origin of raw materials	Farming practices	Pigs born in production area	Castration	Feed origin	Banned foods	Grazing	Preven-tative antibiotics	Slaughtering	Nitrites and nitrates	Casing type	Additives	Smoking	Ageing rooms
Coppa de Corse	PDO	France	Sausage	Well-specified local	Well-specified local	Extensive	Yes		(Partially) well-specified local, primarily local pasture		Specified		Age and weight specified and slaughterhouse must be within the area	Allowed	Natural	Not allowed		Natural
Coppa di Parma	PGI	Italy	Sausage	Commercial			No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified	Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), starters/fermentation starter cultures		Temperature controlled
Coppa Piacentina	PDO	Italy	Sausage	Commercial	Well-specified local		Yes	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Allowed	Natural	Sugars (dextrose, sucrose, fructose)		Temperature controlled
Cotechino Modena	PGI	Italy	Sausage				No or not specified				Not specified			Allowed	Synthetic or natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), natural flavourings		
Crudo di Cuneo	PDO	Italy	Whole muscle	Commercial	Well-specified local		Yes	Allowed but without specifying the method		Table scraps, fish oil, feed cakes in general, biscuits, breadsticks, snack cakes, slaughter waste and animal meal (complete ban), rice by-products	Not specified		Age and weight specified and slaughterhouse must be within the area	Not allowed		Not allowed		Temperature controlled
Csabai kolbász	PGI	Hungary	Sausage	Commercial and local			No or not specified				Not specified		Weight specified	Allowed	Synthetic or natural	Antioxidant of natural origin	Natural	Temperature controlled
Culatello di Zibello	PDO	Italy	Sausage	Commercial	Well-specified local		Yes	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Allowed	Natural			Natural
Dalmatinska panceta	PGI	Croatia	Whole muscle				No or not specified				Not specified			Allowed		Allowed	Natural	Temperature controlled
Dalmatinska pečenica	PGI	Croatia	Whole muscle				No or not specified				Not specified						Natural	Temperature controlled
Dalmatinski pršut	PGI	Croatia	Whole muscle				No or not specified				Not specified					Not allowed	Natural	Temperature controlled
Dehesa de Extremadura	PDO	Spain	Whole muscle	Well-specified local	Well-specified local	Extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area					Natural
Drniški pršut	PGI	Croatia	Whole muscle				No or not specified				Not specified					Not allowed	Natural	Natural

PRODUCT NAME	GI	Country	Product type	Breed	Origin of raw materials	Farming practices	Pigs born in production area	Castration	Feed origin	Banned foods	Grazing	Preventative antibiotics	Slaughtering	Nitrites and nitrates	Casing type	Additives	Smoking	Ageing rooms
Eichsfelder Feldgieker/ Eichsfelder Feldkieker (salsiccia)	PGI	Germany	Sausage	Commercial and local	Well-specified local		No or not specified				Not specified		Weight specified	Allowed	Natural	Not allowed		Temperature controlled
Farinheira de Estremoz e Borba	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Farinheira de Estremoz e Borba	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	Yes	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area		Natural		Natural	Temperature controlled
Farinheria di Portalegre	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Finocchiona	PGI	Italy	Sausage	Commercial and local	Preferably (but not necessarily) local	Semi-extensive	No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Allowed	Synthetic or natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), lactose, starters/ fermentation starter cultures		Temperature controlled
Flönz	PGI	Germany	Sausage				No or not specified				Not specified			Allowed	Synthetic or natural			
Gailtaler Speck	PGI	Austria	Whole muscle	Commercial and local	Preferably (but not necessarily) local		Yes	Allowed but without specifying the method		Growth agents, anabolic agents and hormones	Not specified	Not allowed	Age and weight specified				Natural	Temperature controlled
Göttinger Feldkieker	PGI	Germany	Sausage				No or not specified	Allowed but without specifying the method			Not specified			Allowed		Sugars (dextrose, sucrose, fructose), lactose		
Göttinger Stracke	PGI	Germany	Sausage				No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified	Allowed		Sugars (dextrose, sucrose, fructose), lactose		
Greussener Salami	PGI	Germany	Sausage				No or not specified				Not specified				Synthetic	Natural flavourings	Natural	Natural
Guijuelo	PDO	Spain	Whole muscle	Well-specified local	Well-specified local	Extensive	Yes		(Partially) well-specified local		Specified		Weight specified and slaughterhouse must be within the area					Natural
Gyulai kolbász	PGI	Hungary	Sausage	Commercial and local			No or not specified				Not specified		Weight specified	Allowed	Synthetic or natural	Antioxidant of natural origin	Natural	Temperature controlled
Halberstädter Würstchen	PGI	Germany	Sausage				No or not specified				Not specified			Allowed	Natural	Allowed but not specified which	Natural	
Hiromeri Pitsilias	PGI	Cyprus	Whole muscle				No or not specified				Not specified			Not allowed		Not allowed	Natural	Temperature controlled
Hofer Rindfleischwurst	PGI	Germany	Sausage				No or not specified				Not specified			Allowed	Synthetic	Ascorbic acid (E300)	Natural	
Holsteiner Knochenschinken	PGI	Germany	Whole muscle				No or not specified				Not specified			Allowed			Natural	

PRODUCT NAME	GI	Country	Product type	Breed	Origin of raw materials	Farming practices	Pigs born in production area	Castration	Feed origin	Banned foods	Grazing	Preven-tative antibiotics	Slaughtering	Nitrites and nitrates	Casing type	Additives	Smoking	Ageing rooms
Istarski pršut	PDO	Slovenia/ Croatia	Whole muscle	Commercial	Well-specified local		No or not specified		Well-specified local	Spent brewer's grain, swill and slaughter waste cannot be used for fattening the pigs	Not specified		Age and weight specified	Not allowed		Not allowed		Temperature controlled
Jabugo	PDO	Spain	Whole muscle	Well-specified local	Well-specified local	Extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area					Natural
Jambon d'Ardenne	PGI	Belgium	Whole muscle				No or not specified				Not specified						Natural	
Jambon d'Auvergne	PGI	France	Whole muscle				No or not specified	Allowed but without specifying the method			Not specified		Weight specified	Not allowed		Sugars (dextrose, sucrose, fructose), natural flavourings		Temperature controlled
Jambon de l'Ardeche	PGI	France	Whole muscle		EU		No or not specified			Zootechnical additives for growth are not allowed	Not specified		Weight specified	Allowed		Not allowed except for potassium nitrate	Natural	Natural
Jambon de Lacaune	PGI	France	Whole muscle				No or not specified			Anabolic substances, fish oil, animal meal	Not specified			Allowed		Only potassium nitrate		
Jambon de Vendée	PGI	France	Whole muscle				No or not specified				Not specified		Weight specified	Allowed		Lactose, dextrose, sucrose, glucose, enzymes		Temperature controlled
Jambon du Kintoa*	PDO	France	Whole muscle	Well-specified local	Well-specified local	Semi-extensive	Yes	Allowed but without specifying the method	(Partially) well-specified local	Processed animal proteins	Specified		Age and weight specified and slaughterhouse must be within the area					Natural
Jambon Noir de Bigorre *	PDO	France	Whole muscle	Well-specified local	Well-specified local	Semi-extensive	Yes		(Partially) well-specified local, at least 72.6%		Specified		Age and weight specified and slaughterhouse must be within the area					Natural
Jambon sec de Corse/ Prisuttu	PDO	France	Whole muscle	Well-specified local	Well-specified local	Extensive	Yes		(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area	Allowed		Not allowed		Natural
Jambon sec des Ardennes/ Noix de Jambon sec des Ardennes	PGI	France	Whole muscle				No or not specified	Allowed but without specifying the method			Not specified					Sugars (dextrose, sucrose, fructose)		Temperature controlled
Jambonne de Bayonne	PGI	France	Whole muscle		Well-specified local		Yes				Not specified			Allowed				
Jamón de Serón	PGI	Spain	Whole muscle	Commercial and local			No or not specified	Allowed but without specifying the method			Not specified		Slaughterhouse must be within the area				Natural	Natural

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Jamón de Teruel/Paleta de Teruel	PDO	Spain	Whole muscle	Commercial	Well-specified local		Yes	Allowed but without specifying the method	(Partially) well-specified local		Not specified		Weight specified					Temperature controlled
Jamón de Trevélez	PGI	Spain	Whole muscle	Commercial			No or not specified	Allowed but without specifying the method			Not specified			Not allowed		Not allowed		Natural
Kiełbasa biała parzona wielkopolska	PGI	Poland	Sausage				No or not specified	Allowed but without specifying the method			Not specified				Natural			
Kiełbasa Lisiecka	PGI	Poland	Sausage				No or not specified				Not specified			Allowed	Synthetic or natural		Natural	
Kiełbasa Piaszczanska	PGI	Poland	Sausage				No or not specified	Allowed but without specifying the method			Not specified				Synthetic		Natural	
Kranjska Klobasa	PGI	Slovenia	Sausage				No or not specified				Not specified			Allowed	Natural		Natural	
Kraška panceta	PGI	Slovenia	Whole muscle				No or not specified				Not specified							Temperature controlled
Kraški pršut	PGI	Slovenia	Whole muscle				No or not specified				Not specified					Antioxidant of natural origin		Temperature controlled
Kraški zašink	PGI	Slovenia	Sausage				No or not specified				Not specified				Natural	Sugars (dextrose, sucrose, fructose)		Temperature controlled
Krčki pršut	PGI	Croatia	Whole muscle				No or not specified				Not specified							
Krupnioki śląskie	PGI	Polonia	Sausage				No or not specified				Not specified			Allowed	Natural			
Lacón Gallego/Tradicional	PGI	Spain	Whole muscle	Commercial and local	Well-specified local		Yes	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area					
Lardo di Colonnata	PGI	Italy	Whole muscle		Well-specified local		No or not specified				Not specified			Not allowed		Not allowed		Natural
Linguiça de Portalegre	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	Temperature controlled
Linguíça do baixo alentejo	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area	Not allowed	Natural	Not allowed	Natural	Temperature controlled
Lombo Branco de Portalegre	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified		Natural			Temperature controlled
Lombo Enguitado de Portalegre	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	Temperature controlled

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Lonzo de Corse/Lonzo de Corse-Lonzu	PDO	France	Sausage	Well-specified local	Well-specified local	Extensive	Yes		(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area	Allowed	Natural	Not allowed		Natural
Los Pedroches	PDO	Spain	Whole muscle	Well-specified local	Well-specified local	Extensive, with a low density of pigs per hectare. Depending on the three types of product, the feed can be entirely local, 80% local or 65% local.	Yes		(Partially) well-specified local		Specified		Weight specified and slaughterhouse must be within the area					Natural
Loukaniko Pitsilias	PGI	Cyprus	Sausage				No or not specified				Not specified			Not allowed	Natural	Not allowed	Natural	Temperature controlled
Lountza Pitsilias	PGI	Cyprus	Whole muscle				No or not specified				Not specified			Not allowed		Not allowed	Natural	Temperature controlled
Lucanica di Picerno	PGI	Italy	Sausage				No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified	Allowed	Natural	Ascorbic acid (E300), starters/fermentation starter cultures		Temperature controlled
Međimursko meso 'z tiblice	PGI	Croatia	Whole muscle				No or not specified				Not specified		Age and weight specified			Sugars (dextrose, sucrose, fructose)	Natural	
Melton Mowbray Pork Pie	PGI	United Kingdom	Preserve				No or not specified				Not specified							
Morcela de Assar de Portalegre	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified		Natural			Temperature controlled
Morcela de Cozer de Portalegre	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Morcela de Estremoz e Borba	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	Yes	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area		Natural		Natural	Temperature controlled
Morcilla de Burgos	PGI	Spain	Sausage				No or not specified				Not specified							
Mortadella di Bologna	PGI	Italy	Sausage				No or not specified				Not specified			Allowed	Synthetic or natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), natural flavourings		
Mortadella di Prato	PGI	Italy	Sausage				No or not specified				Not specified				Synthetic or natural			
Newmarket Sausage	PGI	United Kingdom	Sausage				No or not specified		Generically local		Not specified					Antioxidant of natural origin		
Nürnberger Bratwürste/ Nürnberger Rostbratwürste.	PGI	Germany	Sausage				No or not specified				Not specified				Natural			
Oecher Puttes/Aachener Puttes	PGI	Germany	Sausage				No or not specified				Not specified			Allowed	Natural			
Oecher Puttes/Aachener Puttes	PGI	Spain	Sausage				No or not specified				Not specified			Allowed	Natural			

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Pafitiko Loukaniko	PGI	Cyprus	Sausage				No or not specified				Not specified				Natural			Temperature controlled
Paia de Lombo de estremoz e borba	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	Yes	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area		Natural		Natural	Temperature controlled
Paia de Toucinho de Estremoz e Borba	PGI	Portugal	Whole muscle	Well-specified local	Well-specified local	Semi-extensive	Yes	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area				Natural	Temperature controlled
Painho de Portalegre	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	Temperature controlled
Paio de beja	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified				Specified		Age and weight specified and slaughterhouse must be within the area		Natural		Natural	
Paio de Estremoz e Borba	PGI	Portugal	Sausage	Well-specified local	Locale ben specificata	Semi-extensive	Yes	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area		Natural		Natural	Temperature controlled
Pancetta di Calabria	PDO	Italy	Whole muscle	Commercial and local	Well-specified local		No or not specified	Allowed but without specifying the method	(Partially) well-specified local, in line with market availability	Potatoes and by-products, dairy by-products			Age and weight specified	Allowed		Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), starters/fermentation starter cultures, natural flavourings		Temperature controlled
Pancetta Piacentina	PDO	Italy	Sausage	Commercial	Well-specified local		Yes	Allowed but without specifying the method					Age and weight specified and slaughterhouse must be within the area	Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose)		Temperature controlled
Pâté de campagne breton	PGI	France	Preserve				No or not specified						Weight specified	Allowed		Ascorbic acid (E300)		
Pitina	PGI	Italy	Whole muscle				No or not specified							Allowed				Temperature controlled
Porchetta di Ariccia	PGI	Italy	Whole muscle	Commercial			No or not specified	Not practiced					Weight specified					
Prekmurska šunka	PGI	Slovenia	Whole muscle				No or not specified										Natural	Temperature controlled
Presunto de barrancos	PDO	Portugal	Whole muscle	Well-specified local	Well-specified local	Extensive	No or not specified	Allowed within 2 months of weaning but without specifying the method	(Partially) well-specified local	Animal remains	Specified		Age specified					Natural

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Presunto de barroso	PGI	Portugal	Whole muscle			Semi-extensive	No or not specified	Allowed but without specifying the method	(Partially) well-specified local	Products that could interfere with the normal rate of animal growth and development are not allowed, nor are commercial concentrates, hormones and antibiotics	Specified	Not allowed	Age specified			Not allowed		
Presunto de Campo Maior e Elvas	PGI	Portugal	Whole muscle	Well-specified local	Well-specified local	Semi-extensive, with a maximum density of pigs per hectare.	Yes		(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area					Natural
Presunto de Melgaço	PGI	Portugal	Whole muscle	Well-specified local			No or not specified	Alllowed before 4 weeks of age but without indicating the method.					Age and weight specified	Not allowed		Not allowed	Natural	
Presunto de Santana da Serra	PGI	Portugal	Whole muscle	Well-specified local	Well-specified local	Semi-extensive, specific maximum density of pigs	Yes		(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area					Natural
Presunto de Vinhais	PGI	Portugal	Whole muscle	Well-specified local	Well-specified local	Semi-extensive	Yes		(Partially) well-specified local		Specified		Slaughterhouse must be within the area				Natural	Natural
Presunto do Alentejo	PDO	Portugal	Whole muscle	Well-specified local	Well-specified local	Semi-extensive, specific maximum density of pigs	Yes	Allowed but without specifying the method	(Partially) well-specified local		Specified		Age and weight specified and slaughterhouse must be within the area					Natural
Prleška tünka	PGI	Slovenia	Whole muscle				No or not specified				Not specified					Sugars (dextrose, sucrose, fructose)		Temperature controlled
Prosciutto Amatriciano	PGI	Italy	Whole muscle	Commercial			No or not specified	Allowed but without specifying the method			Not specified		Age specified	Allowed		Sugars (dextrose, sucrose, fructose)		Temperature controlled
Prosciutto di Carpegna	PDO	Italy	Whole muscle	Commercial	Well-specified local		Yes	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Not allowed		Not allowed		Temperature controlled
Prosciutto di Modena	PDO	Italy	Whole muscle	Commercial	Well-specified local		Yes	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area					Natural
Prosciutto di Norcia	PGI	Italy	Whole muscle	Commercial			No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified					Temperature controlled

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Prosciutto di Parma	PDO	Italy	Whole muscle	Cosmopolite	Locale ben specificata	Legal provisions are specified: Breeding facilities and equipment shall ensure animal welfare. Shelters shall be fitted out with proper insulation and ventilation systems to guarantee optimum temperatures, effective air circulation and removal of noxious gases. Floors shall be characterised by the lowest possible percentage of cracks and shall be constructed with water-resistant, thermal, and antiskid materials. Depending on the type of diet, all facilities and equipment shall be properly resistant to corrosion.	No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Not allowed		Not allowed		Natural
Prosciutto di San Daniele	PDO	Italy	Whole muscle	Commercial	Well-specified local	Legal provisions are specified: Breeding facilities and equipment shall ensure animal welfare. Shelters shall be fitted out with proper insulation and ventilation systems to guarantee optimum temperatures, effective air circulation and removal of noxious gases. Floors shall be characterised by the lowest possible percentage of cracks and shall be constructed with water-resistant, thermal, and antiskid materials. Depending on the type of diet, all facilities and equipment shall be properly resistant to corrosion.	No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Not allowed		Not allowed		Natural

PRODUCT NAME	GI	Country	Product type	Breed	Origin of raw materials	Farming practices	Pigs born in production area	Castration	Feed origin	Banned foods	Grazing	Preven-tative antibiotics	Slaughtering	Nitrites and nitrates	Casing type	Additives	Smoking	Ageing rooms
Prosciutto di Sauris	PGI	Italy	Whole muscle	Commercial			No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified	Not allowed		Not allowed	Natural	Temperature controlled
Prosciutto Toscano	PDO	Italy	Whole muscle	Commercial	Well-specified local		Yes	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Not allowed		Not allowed		Temperature controlled
Prosciutto Veneto Berico-Euganeo	PDO	Italy	Whole muscle	Commercial	Well-specified local		No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Not allowed		Not allowed		Natural
Rillettes de Tours	PGI	France	Preserve				No or not specified	Not practiced			Not specified		Age and weight specified	Not allowed		Flavourings and colour E150		
Salaisons fumées, marque nationale Grand-Duché de Luxembourg	PGI	Luxembourg	Whole muscle		Preferably (but not necessarily) local		No or not specified			Fish meal cannot be given in the month prior to slaughter			Weight specified	Allowed		Ascorbic acid (E300), sugars (dextrose, sucrose, fructose)	Natural	
Salam de Sibiu	PGI	Romania	Sausage				No or not specified				Not specified		Weight specified	Allowed	Synthetic or natural	"Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), starters/fermentation cultures. Not allowed: flavour enhancers (e.g. monosodium glutamate), acidifiers (e.g. glucono delta-lactone), Colouring agents, added protein (vegetal or animal protein), any other additive that can work as a substitute for meat, sea salt."	Natural	Temperature controlled
Salama da Sugo	PGI	Italy	Sausage				No or not specified				Not specified		Age and weight specified		Natural			Temperature controlled
Salame Brianza	PDO	Italy	Sausage	Commercial	Well-specified local		Yes	Allowed but without specifying the method	(Partially) well-specified local		Not specified		Age and weight specified and slaughterhouse must be within the area	Allowed	Synthetic or natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), lactose, starters/ fermentation starter cultures		Temperature controlled
Salame Cremona	PGI	Italy	Whole muscle	Commercial			No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified	Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), lactose, starters/ fermentation starter cultures, flavourings		Temperature controlled
Salame d'oca di Mortara	PGI	Italy	Sausage		Well-specified local		No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified	Allowed	Natural	Natural flavourings		Temperature controlled

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Salame di Varzì	PDO	Italy	Sausage		Well-specified local		No or not specified				Not specified		Weight specified and slaughterhouse must be within the area	Allowed	Natural			Temperature controlled
Salame Felino	PGI	Italy	Sausage	Commercial			No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified	Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), lactose, starters/ fermentation starter cultures		Temperature controlled
Salame Piacentino	PDO	Italy	Sausage	Commercial	Well-specified local		Yes	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose)		Temperature controlled
Salame Piemonte	PGI	Italy	Sausage	Commercial			No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified	Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), starters/fermentation starter cultures		Temperature controlled
Salame S. Angelo	PGI	Italy	Sausage	Commercial	EU		No or not specified	Allowed but without specifying the method			Not specified		Weight specified	Allowed	Natural			Temperature controlled
Salamini Italyni alla Cacciatora	PDO	Italy	Sausage	Commercial	Well-specified local	Nose rings not allowed	Yes	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Allowed	Synthetic or natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), starters/fermentation starter cultures		Temperature controlled
Salchichón de Vic/ Llonganissa de Vic	PGI	Spain	Sausage				No or not specified				Not specified			Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), starters/fermentation starter cultures	Natural	
Salpicão de barroso	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Salpicão de Melgaço	PGI	Portugal	Sausage	Well-specified local			No or not specified				Not specified		Age and weight specified		Natural		Natural	Natural
Salpicão de Vinhais	PGI	Portugal	Sausage	Well-specified local		Semi-extensive	No or not specified		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	
Salsiccia di Calabria	PDO	Italy	Sausage	Commercial and local	Well-specified local		No or not specified	Allowed but without specifying the method	(Partially) well-specified local, in line with market availability	Manioc, potatoes and by-products, by-products of milk processing	Not specified		Age and weight specified	Allowed	Synthetic or natural	Ascorbic acid (E300), starters/fermentation starter cultures		Natural
Sangueira de barroso	PGI	Portugal	Sausage	Well-specified local	Well-specified local	Semi-extensive	Yes		(Partially) well-specified local		Specified		Age and weight specified		Natural		Natural	

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Saucisse de Montbéliard	PGI	France	Sausage				No or not specified	Allowed but without specifying the method	(Partially) well-specified local		Not specified		Weight specified	Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), lactose	Natural	
Saucisse de Morteau o Jésus de Morteau	PGI	France	Sausage				No or not specified	Allowed but without specifying the method	(Partially) well-specified local		Not specified		Weight specified		Natural		Natural	
Saucisson d'Ardenne/ Collier d'Ardenne/Pipe d'Ardenne	PGI	Belgium	Sausage				No or not specified				Not specified				Synthetic or natural		Natural	
Saucisson de l'Ardèche	PGI	France	Sausage		EU		No or not specified			The use of zootechnical additives for growth is not allowed	Not specified		Weight specified	Allowed	Natural	Not allowed except for potassium nitrate		
Saucisson de Lacaune/ Saucisse de Lacaune	PGI	France	Sausage				No or not specified			Anabolic substances, fish oil, animal meal	Not specified		Weight specified	Allowed	Natural	Sugars (dextrose, sucrose, fructose), lactose, surface mould		Temperature controlled
Saucisson sec d'Auvergne/ Saucisse sèche d'Auvergne	PGI	France	Sausage				No or not specified	Allowed but without specifying the method			Not specified		Weight specified	Allowed	Synthetic or natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), lactose, starters/ fermentation starter cultures		Temperature controlled
Schwarzwälder Schinken	PGI	Germany	Whole muscle				No or not specified				Not specified						Natural	Temperature controlled
Šebreljski želodec	PGI	Slovenia	Sausage				No or not specified				Not specified		Weight specified	Not allowed	Synthetic or natural	Not allowed		Temperature controlled
Slavonski kulen/Slavonski kulin	PGI	Croatia	Sausage	Commercial and local	Well-specified local		No or not specified	Allowed but without specifying the method			Not specified		Age and weight specified		Natural		Natural	
Sobrasada de Mallorca	PGI	Spain	Sausage	Commercial and local	Preferably (but not necessarily) local	Semi-extensive	No or not specified				Specified							
Soppressata di Calabria	PDO	italia	Sausage	Commercial and local	Well-specified local		No or not specified	Allowed but without specifying the method	(Partially) well-specified local but in line with market availability	Manioc, potatoes and by-products, by-products of dairy production	Not specified		Age and weight specified	Allowed	Synthetic or natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), starters/fermentation starter cultures		
Sopressa Vicentina	PDO	Italy	Sausage	Commercial	Well-specified local		Yes			Foods of animal origin (not milk)	Not specified		Age and weight specified and slaughterhouse must be within the area	Allowed	Natural	Sugars (dextrose, sucrose, fructose)		
Speck Alto Adige-Südtiroler Markenspeck/ Südtiroler Speck	PGI	Italy	Whole muscle		EU		No or not specified				Not specified			Allowed			Natural	Temperature controlled

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Szegedi szalámi	PDO	Hungary	Sausage	Commercial and local	Well-specified local	Indoors	Yes	Allowed but without specifying the method	(Partially) well-specified local		Not specified		Age and weight specified and slaughterhouse must be within the area		Synthetic or natural		Natural	Temperature controlled
Thüringer Leberwurst.	PGI	Germany	Sausage				No or not specified				Not specified							
Thüringer Rostbratwurst	PGI	Germany	Sausage				No or not specified				Not specified				Natural			
Thüringer Rotwurst	PGI	Germany	Sausage				No or not specified				Not specified			Allowed	Natural			
Timoleague Brown Pudding	PGI	Ireland	Sausage		Well-specified local		No or not specified		(Partially) well-specified local		Not specified		Distance from the slaughterhouse specifically indicated		Natural			
Tiroler Speck	PGI	Austria	Whole muscle		EU		No or not specified				Not specified		Distance from the slaughterhouse specifically indicated	Allowed			Natural	Natural
Traditional Cumberland Sausage	PGI	United Kingdom	Sausage				No or not specified				Not specified				Natural			
Valle d'Aosta Jambon de Bosses	PDO	Italy	Whole muscle	Commercial	Well-specified local		Yes	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area	Not allowed		Not allowed, all kinds of artificial colouring and preservative are banned		
Valle d'Aosta Lard d'Arnad/ Vallée d'Aoste Lard d'Arnad	PDO	Italy	Whole muscle	Commercial	Well-specified local		Yes	Allowed but without specifying the method			Not specified		Age and weight specified and slaughterhouse must be within the area					
Westfälischer Knochenschinken	PGI	Germany	Whole muscle				No or not specified				Not specified						Natural	
Zampone Modena	PGI	Italy	Sausage				No or not specified				Not specified			Allowed	Natural	Ascorbic acid (E300), sugars (dextrose, sucrose, fructose), natural flavourings		
Zgornjesavinjski' želodec	PGI	Slovenia	Sausage				No or not specified				Not specified			Not allowed	Synthetic or natural	Not allowed		Temperature controlled

*GMOs not allowed in feed

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